

**Notice of Allowability****Application No.**

10/716,630

**Examiner**

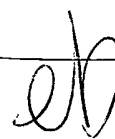
Patricia L. Hailey

**Applicant(s)**

HWANG ET AL.

**Art Unit**

1755



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicants' filing of the application.
2. ☒ The allowed claim(s) is/are 1-22.
3. ☒ The drawings filed on 20 November 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 09/30/04.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
Mark L. Bell  
Supervisory Patent Examiner  
Technology Center 1700

Applicants' Preliminary Amendment, filed on November 20, 2003, has been made of record and entered. In the amendment, a paragraph to provide a cross-reference to the previously filed foreign application (Applicants' foreign priority document) has been added. No new matter has been added by this amendment.

Claims 1-22 remain pending in this application.

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Applicants' Priority Document was filed on November 20, 2003.

### **EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joseph Muncy on September 30, 2004.

The application has been amended as follows:

- a. *In the first line of each of claims 1-18 and 20-22, please change "catalysts" to "catalyst".*

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b. In line 1 of claim 19, please delete the phrase "catalyst support" and insert therefor the phrase *-supported catalyst-*.

Claims 1-18 and 20-22 have been amended to ensure proper grammar, and claim 19 has been amended to ensure proper antecedent basis.

### *Allowable Subject Matter*

3. Claims 1-22 are allowed.

### *Reasons for Allowance*

4. The following is an examiner's statement of reasons for allowance:

The prior art does not teach or suggest the claimed carbon nanocapsule supported catalyst, comprising at least one catalytic metal particles deposited on a carbon nanocapsule having the formula  $F(-M)_n$ , wherein F is the carbon nanocapsule, and n is the number of catalytic metal particle.

Exemplary art includes:

Hwang (U. S. Patent Application Publication No. 2004/0126303), which teaches an *organically functionalized* carbon nanocapsule having a formula similar to the instantly claimed nanocapsule supported catalyst, except that organic functional groups are attached to the nanocapsule. This reference has a common inventor with the instant application.

Majetich et al. (U. S. Patent No. 5,456,986) teach a metal or metal carbide nanoparticle having a carbon coating, which is structurally *opposite* to the claimed invention.

Ruoff et al. (U. S. Patent No. 5,547,748) teach carbon nanoencapsulates comprising multilayered polyhedral shells of carbon (nanoencapsulates). Materials such as metals and alloys can be encapsulated by the nanoencapsulates. See, for example, col. 4, line 55 to col. 5, line 2, especially col. 4, lines 55-57: "Experiments done in support of this invention have demonstrated that a variety of metals can be **encapsulated in the cavity of a nanopolyhedron.**" Emphasis added.

Wang (U. S. Patent No. 5,543,378) teach a composition comprising a carbon nanostructure having a palladium crystallite encapsulated therein.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

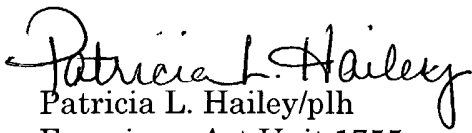
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (571) 272-1369. The examiner can normally be reached on Mondays-Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on (571) 272-1362. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group 1700 Receptionist, whose telephone number is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Patricia L. Hailey/plh  
Examiner, Art Unit 1755  
September 30, 2004

  
Mark L. Bell  
Supervisory Patent Examiner  
Technology Center 1700